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| 09/893,143  | 06/27/2001  | Antti Kansakoski     | 871.0014.USU        | 4012             |
| 29683   | 7590        | 11/16/2006           | EXAMINER            |                  |
| HARRINGTON & SMITH, LLP<br>4 RESEARCH DRIVE<br>SHELTON, CT 06484-6212 |             |                      | ETTEHADIEH, ASLAN   |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2611                |                  |

DATE MAILED: 11/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/893,143

Applicant(s)

KANSAKOSKI ET AL.

Examiner

Aslan Ettehadieh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-12, 14-19, 21-24 and 26-33 is/are rejected.
- 7) ☒ Claim(s) 7, 13, 20 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/27.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Examiner of record has changed to Aslan Ettehadieh, also, applicant's arguments with respect to claims 1 – 33 have been considered but are moot in view of the new ground(s) of rejection.
2. After further search and consideration to claims 15 – 25, allowability has been withdrawn.

### ***Allowable Subject Matter***

3. Claims 7, 13, 20, 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Information Disclosure Statement***

4. The information disclosure statement (IDS) submitted on 06/27/2001 was filed before the mailing date of the first office action on 11/23/2004. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Drawings***

5. The drawings are objected to because elements 26A and 26 do not show how it would be obvious to one skilled in the art at the time of invention was made to use element 26A with 26 (i.e. the connects related to each element, I, Q, lo trigger and 26A to 26). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

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replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

6. Claim 4 is objected to because of the following informalities: please change "said buffer" to "said searcher buffer". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The last limitation of "using the maximum value of lo to

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identify one of m segments of the searcher buffer on which a searcher is to be enabled for operation”, does applicant mean a searcher buffer, the buffer, the searcher, etc.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 4 – 5, 8 – 9, 14 – 16, 19, 21, 24, 26, 29 – 30, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yun (US 6463295) in view of Kang et al. (US 2002/0181632) in further view of Ohno (US 2001/0009562).

9. Regarding claim 1, Yun discloses a code division, multiple access (CDMA) receiver, comprising: an RF section for receiving a CDMA signal (figure 5, col. 1 lines 15 – 41, col. 2 lines 23 – 24); a circuit for determining an instantaneous total received power ( $I_o$ ) of the received CDMA signal (col. 12 lines 42 – 48, col. 38 lines 1 – 10, 44 – 51, col. 39 lines 50 – 60). Yun does not disclose a searcher that is one of enabled for operation or disabled from operation in accordance with a value.

In the same field of endeavor, however, Kang discloses a searcher that is one of enabled for operation or disabled from operation (paragraphs 13, 39, 40). Kang also shows an RF section for receiving a CDMA signal (paragraph 4) and a circuit for determining a total received power ( $I_o$ ) of the received CDMA signal (figure 2 elements 32 – 34, paragraph 10; where instantaneous is not explicitly specified however the total received power ( $I_o$ ) would be the energy result of  $I^2 + Q^2$ ).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use a searcher that is one of enabled for operation or disabled from operation as taught by Kang in the system of Yun to allow the system to perform efficiently and to avoid unnecessary operations (paragraph 13).

In the same field of endeavor, however, Ohno discloses a searcher that is one of enabled for operation or disabled from operation in accordance with a value (paragraphs 44 – 45, 54, figures 3, 7; where the signal c is being interrupted as a value).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use a searcher that is one of enabled for operation or disabled from operation in accordance with a value as taught by Ohno in the system of Yun to reduce power consumption in a searcher (paragraph 15).

10. Regarding claim 9, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claim 1 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claim 1.

11. Regarding claim 26, Yun discloses all limitations of claim 26 as analyzed in claim 1 above.

12. Regarding claim 30, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claim 26 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claim 26.

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13. Regarding claim 4, Yun further discloses wherein said searcher comprises a searcher buffer for storing Inphase and Quadrature (I/Q) samples (col. 37 line 15 – col. 38 line 54). Kang further discloses wherein said searcher comprises a searcher buffer for storing Inphase and Quadrature (I/Q) samples, and wherein said searcher is storing I/Q samples into said buffer (paragraphs 9, 10, 32). Ohno further discloses herein said searcher is responsive to a trigger signal generated by said circuit (paragraphs 44 – 45, 54, figures 3, 7).

14. Regarding claim 5, Yun further discloses wherein said circuit operates to accumulate  $n$  symbol power samples, to scale the  $n$  accumulated symbol power samples, and to compare the scaled symbol power samples to a reference value (col. 27 line 19 – col. 28 line 14; where  $p$  is the power,  $c$  is doing the scaling and the target SINR is the reference value).

15. Regarding claim 8, Yun discloses  $l_0$  as shown above. Yun does not disclose wherein the value is computed over numbers of samples that are less than the total size of a searcher sample buffer, and is used to select samples from only a portion of the searcher sample buffer for use by the searcher. However Kang further discloses wherein the value is computed over numbers of samples that are less than the total size of a searcher sample buffer, and is used to select samples from only a portion of the searcher sample buffer for use by the searcher (paragraphs 24, 38 – 40; where  $P$  and/or  $Q$  are less than  $M$  and where half slot is being interpreted as less than the total size of a searcher sample buffer).

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16. Regarding claim 14, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claim 8 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claim 8.

17. Regarding claim 29, Yun discloses all limitations of claim 29 as analyzed in claim 8 above.

18. Regarding claim 33, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claim 29 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claim 29.

19. Regarding claim 15, Yun discloses a method for operating a code division, multiple access (CDMA) receiver, comprising: receiving a CDMA signal (figure 5, col. 1 lines 15 – 41, col. 2 lines 23 – 24); determining an instantaneous total received power ( $I_o$ ) of the received CDMA signal over  $m$  consecutive segments of the received CDMA signal (col. 12 lines 42 – 48, col. 37 lines 39 – 45, col. 38 lines 1 – 51, col. 39 lines 50 – 60). Yun does not disclose storing samples of the received CDMA signal into a buffer and using a maximum value to identify one of  $m$  segments of the searcher buffer on which a searcher is to be enabled for operation.

In the same field of endeavor, however, Kang discloses storing samples of the received CDMA signal into a buffer (figure 4, paragraphs 24 – 25) and using a maximum value to identify one of  $m$  segments of the searcher buffer on which a searcher is to be enabled for operation (figure 4, paragraphs 13, 24, 25 39, 40; where



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Kang is not explicit about to identify one of m segments of the searcher buffer). Kang also shows an RF section for receiving a CDMA signal (paragraph 4) and a circuit for determining a total received power ( $I_o$ ) of the received CDMA signal (figure 2 elements 32 – 34, paragraph 10; where instantaneous is not explicitly specified however the total maximum received power ( $I_o$ ) would be the energy result of  $I^2+Q^2$ ).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use storing samples of the received CDMA signal into a buffer and using a maximum value to identify one of m segments of the searcher buffer on which a searcher is to be enabled for operation as taught by Kang in the system of Yun to allow the system to perform efficiently and to avoid unnecessary operations (paragraph 13).

In the same field of endeavor, however, Ohno discloses to identify one of m segments of the searcher buffer (paragraphs 44 – 45, 54, figures 3, 7).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use to identify one of m segments of the searcher buffer as taught by Ohno in the system of Yun to reduce power consumption in a searcher (paragraph 15).

20. Regarding claim 16, Yun discloses a method for operating a code division, multiple access (CDMA) receiver, comprising: receiving a CDMA signal and determining an instantaneous total received power ( $I_o$ ) of the received CDMA signal (figure 5, col. 1 lines 15 – 41, col. 2 lines 23 – 24, col. 12 lines 42 – 48, col. 37 lines 39 – 45, col. 38 lines 1 – 51, col. 39 lines 50 – 60). Yun does not disclose selectively one of generating

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or not generating a searcher trigger signal in accordance with the value of  $I_0$ , wherein when generated the searcher trigger signal causes a searcher to process the stored samples

In the same field of endeavor, however, Kang discloses storing samples of the received CDMA signal into a searcher buffer (figure 4, paragraphs 24 – 25) and selectively causes a searcher to process the stored samples (figure 4, paragraphs 13, 24, 25 39, 40; where Kang is not explicit about to identify one of  $m$  segments of the searcher buffer). Kang also shows an RF section for receiving a CDMA signal (paragraph 4) and a circuit for determining a total received power ( $I_0$ ) of the received CDMA signal (figure 2 elements 32 – 34, paragraph 10; where instantaneous is not explicitly specified however the total maximum received power ( $I_0$ ) would be the energy result of  $I^2 + Q^2$ ).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use storing samples of the received CDMA signal into a searcher buffer and selectively causes a searcher to process the stored samples as taught by Kang in the system of Yun to allow the system to perform efficiently and to avoid unnecessary operations (paragraph 13).

In the same field of endeavor, however, Ohno discloses one of generating or not generating a searcher trigger signal in accordance with the value of  $I_0$ , wherein when generated the searcher trigger signal causes a searcher to process (paragraphs 44 – 45, 54, figures 3, 7).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use one of generating or not generating a searcher trigger signal in accordance with the value of  $I_0$ , wherein when generated the searcher trigger signal causes a searcher to process as taught by Ohno in the system of Yun to reduce power consumption in a searcher (paragraph 15).

21. Regarding claim 21, the function claimed as apparatus is nothing more than steps of the method as claim 16 above and therefore, it is rejected as in considering the aforementioned rejection for the method claim 16, wherein, Yun discloses all limitations of claim 21 as analyzed in claim 16 above.

22. Regarding claim 19, Yun further discloses wherein the searcher buffer stores Inphase and Quadrature (I/Q) samples (col. 37 line 15 – col. 38 line 54). Kang further discloses wherein the searcher buffer stores Inphase and Quadrature (I/Q) samples (paragraphs 9, 10, 32).

23. Regarding claim 24, the function claimed as apparatus is nothing more than steps of the method as claim 19 above and therefore, it is rejected as in considering the aforementioned rejection for the method claim 19.

24. Claims 2 – 3, 6, 10 – 12, 17 – 18, 22 – 23, 27 – 28, 31 – 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yun (US 6463295) in view of Kang et al. (US 2002/0181632) in view of Ohno (US 2001/0009562) in further view of Chung et al. (US 5642377).

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25. Regarding claim 2, Yun discloses *lo* as shown above. Yun does not disclose wherein said circuit comprises a comparator for comparing a value against a threshold, and for generating a searcher trigger signal only when *lo* exceeds the threshold.

In the same field of endeavor, however, Chung discloses wherein said circuit comprises a comparator for comparing a value against a threshold, and for generating a searcher trigger signal only when a value exceeds the threshold (col. 2 lines 54 – 60, col. 4 lines 12 – 14, col. 5 lines 15 – 30, col. 7 lines 46 – 63).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use wherein said circuit comprises a comparator for comparing a value against a threshold, and for generating a searcher trigger signal only when a value exceeds the threshold as taught by Chung in the system of Yun to optimize detection and improve acquisition (col. 3 lines 42 – 57).

26. Regarding claim 10, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claim 2 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claim 2.

27. Regarding claim 17, Yun discloses all limitations of claim 17 as analyzed in claim 2 above.

28. Regarding claim 22, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claim 22 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claim 17.

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29. Regarding claim 27, Yun discloses all limitations of claim 27 as analyzed in claim 2 above.

30. Regarding claim 31, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claim 31 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claim 2.

31. Regarding claim 3, Yun discloses  $I_o$  as shown above. Yun does not disclose wherein said circuit comprises a comparator for comparing a value against a threshold, and for generating a searcher trigger signal only when  $I_o$  exceeds the threshold.

In the same field of endeavor, however, Chung discloses wherein said circuit comprises a comparator for comparing a value against a threshold, and for generating a searcher trigger signal when  $I_o$  exceeds the threshold, or if a value does not exceed the threshold, for generating the searcher trigger signal within some predetermined period of time (col. 2 lines 54 – 60, col. 4 lines 12 – 14, col. 5 lines 15 – 30, col. 7 lines 46 – 63, col. 8 lines 46 – 56).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use wherein said circuit comprises a comparator for comparing a value against a threshold, and for generating a searcher trigger signal when  $I_o$  exceeds the threshold, or if a value does not exceed the threshold, for generating the searcher trigger signal within some predetermined period of time as taught by Chung in the system of Yun to optimize detection and improve acquisition (col. 3 lines 42 – 57).

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32. Regarding claim 11, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claim 3 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claim 3.

33. Regarding claim 18, Yun discloses all limitations of claim 18 as analyzed in claim 3 above.

34. Regarding claim 23, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claim 23 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claim 18.

35. Regarding claim 12, Yun discloses all limitations of claim 12 as analyzed in claims 3 and 4 above.

36. Regarding claim 6, Yun discloses all limitations of claim 6 as analyzed in claim 12 above.

37. Regarding claim 28, Yun discloses lo as shown above. Yun does not disclose where said enabling means is responsive to a value not exceeding the threshold within some predetermined period of time, for generating the searcher means trigger signal.

In the same field of endeavor, however, Chung discloses where said enabling means is responsive to a value not exceeding the threshold within some predetermined period of time, for generating the searcher means trigger signal (col. 2 lines 54 – 60, col. 4 lines 12 – 14, col. 5 lines 15 – 30, col. 7 lines 46 – 63, col. 8 lines 46 – 56).

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Therefore it would have been obvious to one skilled in the art at the time of invention was made to use where said enabling means is responsive to a value not exceeding the threshold within some predetermined period of time, for generating the searcher means trigger signal as taught by Chung in the system of Yun to optimize detection and improve acquisition (col. 3 lines 42 – 57).

38. Regarding claim 32, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claim 28 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claim 28.

***Other prior art cited***

The prior art made of record and not relies upon is considered pertinent to applicant's disclosure.

39. Nolan et al. (US 7013257) discloses a an RF section for receiving a CDMA signal and a circuit for determining an instantaneous total received power (I<sub>o</sub>) of the received CDMA signal (figures 24, col. 1 lines 41 – 44, col. 9 lines 1 – 25, col. 12 lines 50 – 55, col. 13 lines 25 – 26)

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aslan Ettehadieh whose telephone number is (571) 272-8729. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on (571) 272-3021. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aslan Ettehadieh  
Examiner  
Art Unit 2637

AE

  
**KHAI TRAN**  
**PRIMARY EXAMINER**